

TECHNOLOGICAL CHANGE CASE STUDIES

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**Manitoba
Labour
Research and
Planning**



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1.0 INTRODUCTION

The purpose of this report is to examine how a number of firms in Manitoba have introduced technological changes, and how the implementation impacted upon and was influenced by labour-management relations.

The report consists of eight case studies of firms currently operating in Winnipeg, and reviews the technological changes which they have experienced in the last five years. The focus of the review is on the effectiveness of both formal and informal labour relations mechanisms, particularly collective agreement provisions used to implement changes.

1.1 Background

In recent years, technological change in the workplace has become an important issue for those concerned with labour-management relations. Concerns stem from several aspects of the change. One is the long term effect which technological change may impose upon workers through layoffs and displacement. Programs and services available to laid off employees are of concern to policy makers as well as to workers and employers.

Companies and unions adopt varied attitudes when new technologies are introduced. These attitudes may contribute to better labour-management relations or may create more conflict. Even where legislation or collective agreements specify what action shall be taken in the introduction of new technology, considerable latitude still exists for employers in this regard.

The problem of technological change and its impact on employees has been a major policy issue for several years. In order to cushion the effects of such changes on workers, Manitoba has enacted legislation regarding workers in both unionized and non-unionized workplaces.

The Employment Standards Act of Manitoba contains provisions for notice of group terminations for any reason. Any group termination involving more than fifty employees must follow a procedure which includes advance notice to employees and advance notice to the Minister of Labour. The Minister has the power to establish a joint planning committee to develop an adjustment program for the affected employees. (See Appendix 1)

Employees covered by collective agreements are provided with some protection under Section 72 of The Manitoba Labour Relations Act. This section requires employers to give 90 days' notice of a technological change which is likely to result in the termination and/or affect the conditions of employment of a significant number of employees. Since this section was enacted in 1972, only one application in respect of its provisions has been made. (See Appendix 2)

Collective agreements may make specific reference to advance notice in the case of the technological change; they are either reiterating the provision from the Act, or adding variations or clarifications to suit their particular situation. There were 217 collective agreements in effect January 1, 1985 (or 37% of those on file with Manitoba Labour) with special provisions for advance notice in the event of technological change.

Additional provisions for employees affected by technological change are occasionally included in collective agreements. These provisions may be for joint consultation, employment security, job reclassification, training or retraining, relocation allowance, severance pay, or other arrangements to suit individual circumstances.

Health and safety in the workplace is another aspect of technological change. New technologies may diminish some health and safety problems while increasing or introducing new and different hazards.

The Workplace Safety and Health Act addresses the safety and health of workers. Its application, however, is broad and does not specifically refer to the potential health risks associated with the introduction of new technology.

One health concern which has arisen recently concerns the effects of video display terminals (VDT's). While existing legislation does not deal specifically with this concern, a number of collective agreements now entitle employees to employer-financed eye examinations and the right to alternative work for pregnant operators. A few agreements also provide for ten minutes of alternate duties after two hours of continuous operation.

2.0 METHODOLOGY

In selecting firms for this study, an attempt was made to attain a cross-section of Manitoba industries. This ensured a wide representation of experiences in implementing technological change, as well as a variety of new technologies. Since the effectiveness of collective agreements was one of the concerns addressed by this study, all employers selected had to employ workers covered by collective agreements. Selected employers also had to have implemented some type of technological change in their workplace in the last five years. Finally, both employer and union viewpoints had to be represented; both parties had to be willing to participate in the study.

Given these constraints, the determination of the sample was completed with some difficulty. Ten firms were identified which satisfied these criteria, but one was eventually excluded because scheduling of interviews proved to be impractical.

For purposes of this study, a broad definition of technological change was used to avoid conflict over the meaning and interpretation of the definition. Technological change was defined as any change in methods, production processes or materials used in the workplace which caused a group of employees to be trained/retrained, reassigned, laid off or terminated. One case was excluded from the analysis following the interviews because neither union nor management identified a change which fell within this definition.

Following the selection procedure, which included an initial contact with employers and unions, interviews of both parties were conducted. A copy of the questionnaire was distributed to participants in advance of the interview to allow them time to prepare responses. Questions asked at the interviews focused on the details of the particular technological change, provisions in the collective agreement, implementation of the change, worker adjustment, and the employer's and union's conclusions concerning the change and its method of implementation. (See Appendix 3)

3.0 TECHNOLOGICAL CHANGE AND EFFECTS ON PERSONNEL

Since firms from several industries were selected for the case studies, a wide variety of technological changes were revealed by the survey. Changes occurred in production and administration, and were instituted as a result of new machinery and equipment or due to changes in work procedures. The technological changes in these cases were by-and-large quite substantial, involving a large investment by the employer.

The effects of changes on skill requirements and staffing levels varied widely. Only one firm reported layoffs directly related to the new technology. Changes in skill requirements resulted in higher skills in some cases, and deskilling in others.

4.0 COLLECTIVE AGREEMENT PROVISIONS/IMPLEMENTATION

In each of the cases reviewed, a collective agreement was in force or being renegotiated. Negotiated provisions for applying technological changes existed in some of the cases examined.

Where such provisions existed, there were some differences of interpretation between management and labour as to whether a change qualified as a technological change under the definition provided in the collective agreement. Management was less likely to interpret a change in process or procedure, or application of new equipment, as a technological change covered by the agreement, particularly where no layoffs or displacements were expected. Unions maintained that the technological change provisions should apply in these cases. They also suggested in some cases that a cutback in production caused by fluctuating demand should come under the technological change provisions.

Of the eight cases examined, four collective agreements had specific provisions relating to technological change and four did not. Interestingly, advance notice of the changes was given in two cases not covered by advance notice requirements. In two cases where advance notice provisions did exist, there was an interpretation problem resulting in no formal notice. Joint consultation was undertaken in each of the cases where the collective agreement

required it, and also occurred in two cases where it was not required. Most of these discussions were concerned with **post facto** conditions, but in some cases employee input was requested before the change was implemented and/or finalized.

The individual cases are described in more detail as follows:

Case 1:

A medium sized (about 100 employees) garment manufacturer introduced a Heatron system and computerized marking to the manufacturing process. No layoffs occurred, but the wage rate (piece rate) system was altered to compensate for the new technology. As a result, overall earnings of employees increased. Retraining was minimal since the change resulted in the deskilling of jobs.

No technological change provisions existed in the collective agreement, and no notice was given. The employer indicated that advance notice/consultation was not necessary; employees did not "have an understanding of the change and its effects". Formal consultation meetings did occur after the technological change was in effect, largely to transfer information to the employees. Consultation dealt more with the effect on wages, i.e., piece rates, than with job content.

Case 2:

A small (less than 50 employees) metal processing company plans to replace four die-casting machines with one computerized machine. Also planned are the introduction of new finishing turntables and a computerized inventory system. These changes will necessitate significant retraining to upgrade skills in all of the affected areas. No layoffs are planned.

No technological change provisions existed in the collective agreement, but all employees were aware that changes would occur sometime in the future. Extensive consultation with employees has already taken place.

Case 3:

A medium sized (50 to 100 employees) food manufacturer introduced heat exchangers to reduce energy costs and a new evaporator/purifier system. No layoffs were involved, and new positions were created for skilled trades workers.

While the contract required three months' notice, in fact employees had been notified informally up to two years in advance. Joint consultation was provided for in the contract and was used informally.

Case 4:

A large (500-1000 employees) food processing employer instituted a reorganized process in one segment of the operation, to speed up operations. Management indicated that layoffs occurred not as a result of technological change, but as a result of fluctuating demand. Some jobs were redesigned, but no retraining needs were identified by either union or management. Expanded production in one area offset declines in another, resulting in the use of seniority provisions to bump junior workers who were laid off.

No contract provisions related to technological change existed. Notice was not given, although employees became aware of minor changes during construction phases. Major restructuring plans not related to this particular case have been the subject of formal discussions.

Case 5:

A large (500-1000 employees) insurance firm was in the process of introducing a new computerized system to the policy and underwriting department, and a new telephone switchboard system. The employer has planned no layoffs, and an upgrading of employee skills will be required.

The collective agreement required advance notice and joint consultation. In only one of the two cases of technological change was advance notice given, because of interpretation differences. Joint consultation also occurred in the developmental stage in the one case, but not in the other.

Case 6:

A large (over 1000 employees) retailer instituted a system of pre-wrapping products to reduce individual customer service. Although job duties were altered in the affected positions, retraining was minimal and no layoffs took place.

Although advance notice was required, none was given because management interpreted the agreement to apply only to cases where employees were displaced. No joint consultation was required in the collective agreement and none occurred; the company considered it unnecessary and unwise, given the competitive nature of business.

Case 7:

A medium sized (200-500 employees) manufacturer of fabricated structural metal products introduced numerical control to two aspects of production. Three persons were laid off and retraining (upgrading) was required for operators.

Although no advance notice was required, the employer did inform employees of the change three months in advance. No joint consultation on technological change was required and none occurred.

Case 8:

A medium sized (100-200 employees) beverage manufacturer instituted a new process for handling returns, and a new labelling system. No layoffs occurred, but 12 employees were transferred to other positions as a result of the new returns process, and retraining was provided to the employees working with labelling equipment.

The collective agreement called for 90 days' advance notice. In practice, the company provided five months' notice. The requirement in the contract for joint consultation was also met following the change.

5.0 ADJUSTMENT

In most cases the technological change under study did not result in reclassification of positions. In one case, a pay adjustment was made without recourse to reclassification, and in one case negotiations were still underway to determine new classifications. The latter was the only case where layoffs were clearly attributable to the introduction of new technology. Employees did not receive severance pay, as the collective agreement had no requirements for such.

Seniority rights have been involved in three cases to determine who would be laid off or transferred. In two cases, a small number of displaced employees will be or have been retrained or transferred within the company. The retraining required due to technological change generally has been minimal and has been on-the-job, supplied by the employer or the equipment manufacturer.

Some minor health and safety concerns were expressed as a direct result of the technological change. In two cases the union expressed concern over stress and fatigue problems caused by increased output and a faster work pace in general. Occasional problems have been investigated and resolved. New equipment in at least two cases was considered to be safer than the old equipment. Regular meetings of health and safety committees were reported in each workplace.

6.0 SUMMARY OF GENERAL RESULTS

Employee resistance to the technological changes occurred only initially and was overcome quite readily as employees became more familiar with the new equipment or processes. Initially some employees were skeptical about the changes, but in most cases developed an interest and even enthusiasm for the new methods. One notable exception occurred, where an employer did not consult with employees, and employees feared that the pace of work would be increased

to an unreasonable level. In this one case, other circumstances i.e., decline in product demand and overall industry rationalization, coupled with a recent history of industrial disputes, have probably contributed to the attitudes relating to the technological change.

In those cases where the type of technological change under study could be fairly well isolated from other factors, employers and unions reported overall success in achieving greater productivity and improved competitiveness. Two companies that had measured results reported a doubling and tripling of output as a direct result of the change. Unions were generally happy with the changes and in several cases indicated that by keeping the employer competitive, these changes were actually effecting greater job security.

However, the introduction of technological changes was not completely problem free. In at least two cases there was a conflict over the definition of technological change, because of advance notice requirements in the collective agreements. Companies tended to interpret that these requirements did not apply if there were no layoffs or no displacements resulting from the change. Unions were concerned, in some cases, that a more rapid work pace was contributing to more physical and mental stress among workers. The ability to monitor individual output was another aspect to which unions objected. In one case, the general deskilling of work was a concern (in most others, the technological change involved upgrading of skills). Piece rates were grieved as a result of one technological change.

7.0 CONCLUSIONS

At the outset of this study, it was expected that labour and management would indicate a fair degree of conflict arising from the implementation of technological changes, and that numerous suggestions for improving the process would be forthcoming. These expectations were unfulfilled for the large part. In most cases very little conflict was reported by either management or union.

In the course of this study, both management and unions referred frequently to past experiences with technological change. Isolation of the particular technological change under study was not entirely possible. The conclusions from this study must therefore be qualified, in that the success of

one technological change may well be determined by previous experiences, i.e., by the whole labour-management climate within the firm. Thus, if a good labour relations climate exists in a workplace, it is likely that technological change would be introduced successfully with little or no conflict.

The general success of implementing technological changes reported in this study may be a function of the improving economy and expanding markets which enabled productivity increases without causing layoffs. At this stage of the business cycle (i.e., recovery from severe recession) there is also normally less union militancy to complicate the issue. Employees in several firms were happy to see technological change because of improved job security in a more competitive company.

Success in introducing a new technology also appears to depend on getting employees interested. Some resistance to change occurs in every situation. Providing new or additional challenges to employees can minimize negative reactions. Some jobs are deskilled, but even in these cases, a new way of doing work can break the routine. Additional interest is generated if employees are required to upgrade their skills in order to use the new technology.

With minor exceptions, the cases of technological change in this study resulted in very little unresolved conflict between labour and management. Problems that did arise in individual cases were dealt with in ways that did not appear to predispose the parties to conflict in subsequent instances of technological change. The ability of unions and management to resolve these problems was not related to provisions in collective agreements; in fact, successful implementation was just as likely where there were no contract provisions. This was particularly true for joint consultation provisions. Informal consultation occurred in most cases and proved to be as effective as formal joint consultation.

APPENDIX 1

"The Employment Standards Act"

Notice for Group Termination of Employment
Section 35.1(1)

Minister May Appoint Committee
Section 35.1(7.1)

Object of Joint Planning Committee
35.1(7.12)

Notice for group termination of employment.

35.1(1) Any employer who terminates, either simultaneously or within any period not exceeding four weeks, the employment of a group of fifty or more employees, shall give notice to the minister, in writing, of his intention to do so at least

- (a) ten weeks before the date of termination of the employment of the employee in the group whose employment is first terminated where the group of employees whose employment is to be terminated does not exceed one hundred;
- (b) fourteen weeks before the date mentioned in clause (a) where the group exceeds one hundred but does not exceed three hundred; and
- (c) eighteen weeks before the date mentioned in clause (a) where the group exceeds three hundred.

En. S.M. 1972, c.52, s.5; Am. S.M. 1982, c.35, s.6.; S.M. 1985, c.34, s.4.

Minister may appoint committee.

35.1(7.2) Without limiting the generality of subsection (7), where notice is given to the minister in accordance with subsection (1), the minister may establish and appoint a joint planning committee consisting of

- (a) not less than 2 persons representative of the views of the employer;
- (b) not less than 2 persons representative of the views of the affected employees; and
- (c) such other persons considered by the minister to be suitable for appointment to the committee.

En. S.M. 1985, c.34, s.6.

Object of joint planning committee.

35.1(7.12) The object of a joint planning committee shall be to develop on a co-operative basis an adjustment program to eliminate the necessity for the termination of employment or to minimize the impact of such termination on the affected employees and to assist those employees in obtaining other employment.

En. S.M. 1985, c.34, s.6.

APPENDIX 2

"The Labour Relations Act"

Notice of Technological Change
Sections 72(1), (2), (3)

Notice of technological change.

72(1) Where an employer who is bound by a collective agreement affecting a unit of his employees proposes to effect a technological change that is likely to affect the terms and conditions, or the security, of employment of a significant number of employees in the unit or to alter significantly the basis upon which the collective agreement was negotiated, he shall give notice of the technological change to the bargaining agent bound by the collective agreement at least ninety days before the date on which the technological change is to be effected.

Contents of notice.

72(2) The notice referred to in subsection (1) shall be in writing and shall state

- (a) the nature of the technological change;
- (b) the day on which the employer proposes to effect the technological change;
- (c) the approximate number and type of employees likely to be affected by the technological change; and
- (d) the effect that the technological change is likely to have on the terms and conditions, or security, of employment of the employees affected or the alteration that is likely to be made to the basis upon which the collective agreement was negotiated.

Notice to bargain.

72(3) Where an employer gives notice under subsection (1), the bargaining agent bound by the collective agreement may serve notice upon the employer to commence collective bargaining with a view to the revision of the collective agreement or the conclusion of a new collective agreement, and thereupon the collective agreement in effect at the time the notice is given terminates on the earlier of

- (a) the date of expiry thereof; or
- (b) the day ninety days after the day on which the notice to commence collective bargaining is served upon the employer;

unless it is renewed prior thereto.

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APPENDIX 3

Questionnaire

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TECHNOLOGICAL CHANGE IN THE WORKPLACE

QUESTIONS TO BE ASKED OF EMPLOYERS AND LABOUR ORGANIZATIONS

A/ BACKGROUND INFORMATION REGARDING WORKPLACE:

Name of employer

Address

Industry

Name of union

No. of employees in the company

Name of person interviewed

Local number

Size of the bargaining unit

Position

Phone No.

- Term of the collective agreement currently in force
- Are there any workers outside this bargaining unit employed by the company who have been subjected to a technological change in recent years?

B/ BACKGROUND OF TECHNOLOGICAL CHANGE

- Approximate date the technological change was introduced
- Description of the change
- Was there any government assistance provided regarding the type of change to be introduced?
- Reasons for the introduction of the technological change
- Number of employees prior to the introduction of the change
- Number of employees following the introduction of the change
- If applicable explain any fluctuations in the workforce

C/ CONTRACT PROVISIONS

- Was a collective agreement in force at the time the technological change was introduced?
- If yes, did the collective agreement contain specific provisions regarding technological change? Were there any other provisions in the collective agreement that pertained to technological change?
- To what extent were the provisions of the contract used?
Were they workable?
- Have different and/or new contract provisions been negotiated since the technological change was introduced?

D/ IMPLEMENTATION

- How much advance notice of the technological change was given to the union and the employees?
- Was any form of joint consultation used?
If so, of what nature was it? Explain in detail.
- Were there any reclassifications and pay level adjustments associated with the introduction of the technological change? If so, explain the procedure used.
- What type of health and safety considerations were made at the time the technological change was introduced?

E/ ADJUSTMENT

- Were any employees laid off/terminated as a result of the technological change?
If so, in general, what types of occupations did these employees hold?
other characteristics?
Was any other method used to reduce the workforce - such as attrition, early retirement?
What method was used to select those who were laid off/terminated?
- How much advance notice did these individuals receive prior to being laid off/terminated?
- Was there any type of severance pay provided to the laid off/terminated employees?
- Were any programs or services made available to the laid off/terminated employees. (Such as job search techniques, relocation counselling, etc.)
- How many employees needed to be trained/re-trained following the introduction of the technological change?
What type of training/retraining was provided to those employees?
(Explain in detail)
For how long was the training provided?

F/ FINAL OUTCOME

- Was there employee resistance to the introduction of the technological change?
- Overall, was the technological change implemented successfully?
What could have been done differently or more effectively?
- Did any problems arise because of the introduction of the technological change?
- Did the introduction of the technological change achieve the desired objectives?
(e.g. productivity improvements, lower unit costs, etc.)
- Relative to other companies in the same industry nationally and internationally, how technologically advanced is this firm?